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Preface

Frederick M. Azar

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Knee and Hip Reconstruction

A Digital Platform for the Self-Management of Knee Arthritis: MyArthritisRx.com

Richard Iorio, Nicholas Biadasz, Nancy Giunta, Antonia F. Chen, Thomas A. Einhorn, and Raj Karia

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MyArthritisRx.com (MARx) is an online digital platform with resources to effectively manage osteoarthritis and directs patients to the appropriate information and tools to manage their disease with or without a coach. The key to self-management is a self-evaluation and staging program powered by an algorithm based on 150,000 arthritis patients. Outcome data (PROMs), comorbidities, demographics, and personalized characteristics are used to provide a personalized self-evaluation and staging assessment which characterizes disease severity and risk of progression. The initial 6-week program was completed by 100 pilot patients with 92% reporting some improvement. MARx offers evidence of efficacy with promise of cost savings and improved arthritis care.

The Utility of Chlorhexidine Cloth Use for the Prevention of Surgical Site Infections in Total Hip Arthroplasty and Surgical as well as Basic Science Applications: A Meta-Analysis and Systematic Review

Zhongming Chen and Michael Albert Mont

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Skin antisepsis, such as ready-to-use, no-rinse, 2% chlorhexidine-impregnated cloths, is one of the fundamental cornerstones for reducing periprosthetic infections after primary lower extremity total joint arthroplasties. This systematic review presents background material concerning the problem and methods to deal with and then describes the use of chlorhexidine cloth prophylaxis related to various surgical applications. The authors found an almost universal benefit of the cloths. In the meta-analysis, the total pooled effect showed a reduction in infection rates. The use of chlorhexidine cloths is appropriate for prophylaxis for knee arthroplasty, hip arthroplasty, and a variety of other surgeries.

The Use of Proximal Femur Replacement for the Management of Oncologic Lesions in the Proximal Femur: A Review

Devon Tobey, Clayton Wing, Tyler Calkins, and Robert K. Heck

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With improved chemotherapeutic treatment, patients with primary or metastatic bone tumor have improved prognoses and longer life expectancies; therefore, durable limb-salvage constructs are critical. For tumors of the proximal femur, endoprosthetic replacement is an option for treatment in primary and metastatic disease, with the goals being tumor and pain control, earlier mobilization, shorter recovery period, and, in primary tumors, cure. This study provides a summary of current concepts in the treatment of oncologic lesions in the proximal femur with endoprostheses. Discussion of the inherent complications of these constructs is presented as well as the risks and treatment of reconstruction failure.

Trauma

Heterotopic Ossification after Trauma

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Jad Lawand, Zachary Loeffelholz, Bilal Khurshid, and Eric Barcak

Heterotopic ossification (HO) refers to benign ectopic bone formation in soft tissue and is common following trauma surgery. HO bone can restrict movement and progress into ankylosis that may necessitate surgical intervention. This article discusses the current literature on the pathophysiology, prophylaxis, treatment, and epidemiology of postoperative HO following orthopedic trauma.

Fixation Principles for Pathologic Fractures in Metastatic Disease

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Kendall M. Masada, Sarah R. Blumenthal, and Cara A. Cipriano

The management of pathologic fractures differs from nonpathologic fractures with respect to preoperative evaluation, surgical strategies, adjuvant therapies, and complication rates. These issues must be understood to provide appropriate musculoskeletal care for patients with metastatic disease.

Pediatrics

Benign Bone Lesions Found in Childhood

59

Marcos R. Gonzalez, Ty K. Subhawong, and Juan Pretell-Mazzini

Benign bone tumors are a wide variety of usually asymptomatic neoplasms, which in most cases are diagnosed due to secondary causes. As such, their real incidence is unknown. In the majority of cases, plain radiographs are enough for diagnosis; more advanced imaging, such as CT scan or MRI is sometimes performed for equivocal lesions. Treatment approach depends on whether the lesion is symptomatic and the risk of further progression, or development of secondary malignancies. When non expectant management is decided, treatment options include minimally invasive methods and surgery.

Hand and Wrist

Giant Cell Tumor of the Distal Radius: A Review

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Matthew C. Hess, Lisa Kafchinski, and Erin Ransom

Giant cell tumor of the distal radius presents a significant challenge in management due to high risk of recurrence and potential loss of function. Shared decision-making guides management, particularly for more advanced lesions. Intralesional curettage can optimize wrist function but at the cost of a higher recurrence risk. Wide resection decreases local recurrence but has higher complication rates regardless of reconstruction method. No functional difference exists between motion-preserving procedures and arthrodesis; therefore, patients should be clearly informed of the risks and benefits of each treatment option.

Shoulder and Elbow

Management of Proximal Humeral Oncologic Lesions

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Alexandra M. Arguello, Matthew T. Houdek, and Jonathan D. Barlow

The proximal humerus is a common location for primary tumors, benign lesions, and metastatic disease. Advances in neoadjuvant and adjuvant therapy have allowed for limb-salvage surgery in most of the cases. There are numerous options for surgical management of proximal humerus lesions and the decision to pursue one over another depends on factors such as age, comorbidities, pathology, location within the proximal humerus, planned resection margins/size of defect, and bone quality. Long-term outcomes for these techniques tend to be retrospective comparative studies, with recent studies highlighting the improved outcomes of reverse total shoulders.

Management of Scapular Tumors

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Matthew T. Houdek, Benjamin K. Wilke, and Jonathan D. Barlow

Scapular resections are large oncologic undertakings. Due to the soft tissue coverage of the scapula, tumors are often able to be resected with a negative margin. Involvement of the brachial plexus and axillary vessels is rare, allowing for a limb-salvage surgery in most cases. Functional outcomes are based on the magnitude of resection; patients undergoing a partial scapulectomy and those with glenoid preservation demonstrate improved outcomes compared to patients undergoing a total scapulectomy or glenoid resection. Although scapular endoprosthetics are available, there is limited data to support their routine use.

Foot and Ankle

Management of Periprosthetic Bone Cysts After Total Ankle Arthroplasty

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Edward S. Hur, Nabil Mehta, Simon Lee, and Daniel D. Bohl

Modern improvements in total ankle arthroplasty (TAA) have increased the performance of this procedure for treatment of end-stage ankle arthritis. A common finding after TAA is the formation of periprosthetic bone cysts, which can be clinically silent or result in TAA failure. The exact cause of periprosthetic bone cysts has not been established, but major theories are related to osteolysis secondary to implant wear, micromotion, and stress shielding. Treatment can be nonoperative with clinical observation for small, asymptomatic cysts. Large, progressive, and symptomatic cysts often merit surgical treatment with debridement and grafting, revision TAA, or salvage arthrodesis.